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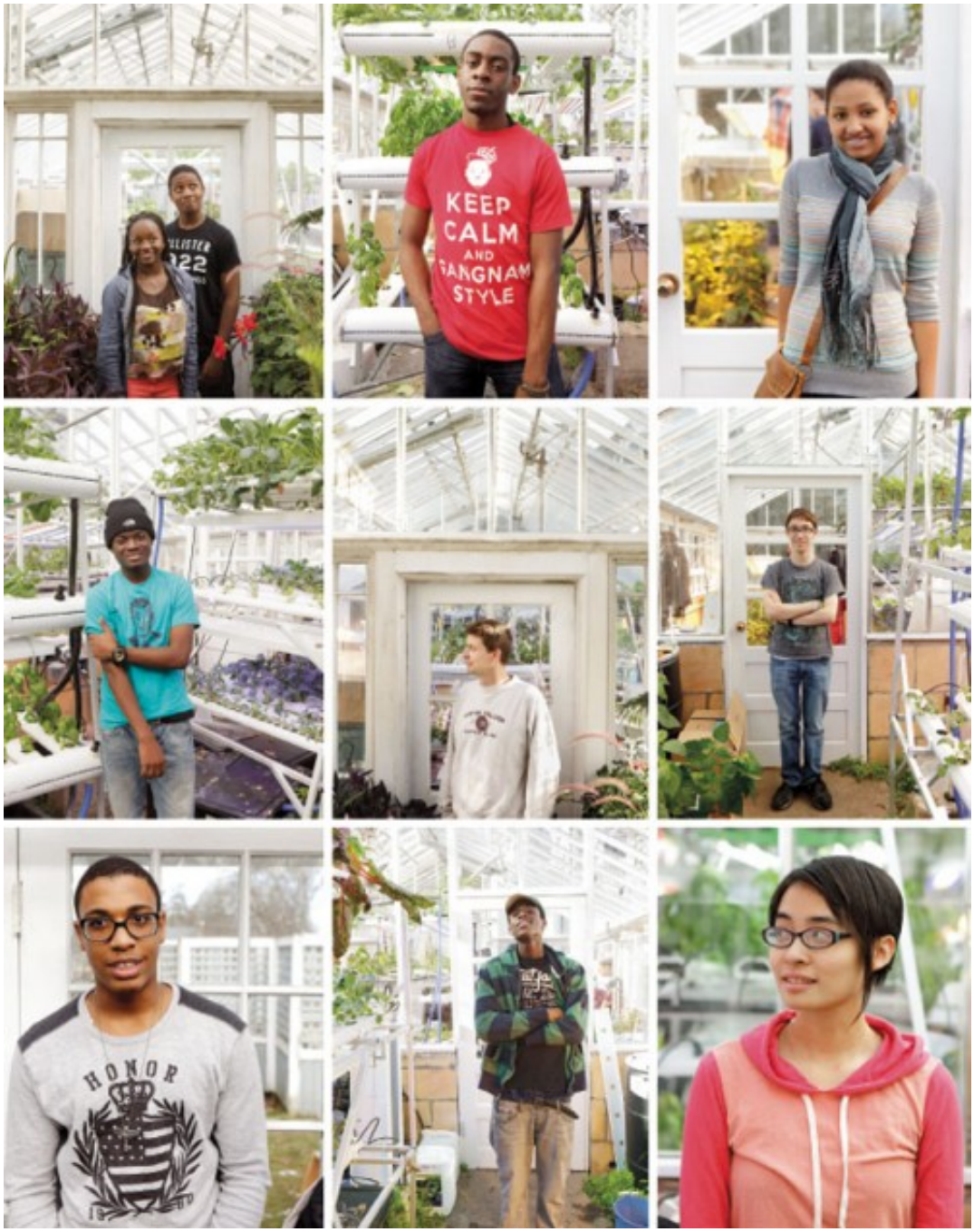
BOSTON TEENS GROW GREEN



Boston Teens Grow Green

Words by Andrea Pyenson / Photographs by Adam Detour

By all appearances, 16-year-old Malik Randall is a born salesman. On a November Saturday at the Egleston Farmers Market in Jamaica Plain, he ushers shoppers into the small booth he and his fellow students have set up, engaging them in conversations that more often than not result in sales. “Do you want the roots or not?” he asks one customer, pulling individual bok choy plants, with their roots, from the food-grade plastic tubes

in which they are growing hydroponically. At the same time Lori Phillips, 17, is explaining the soil-free growing system to a curious passer-by. Her audience, however, decides not to buy anything.

Randall and Phillips are enrolled in Boston College's Lynch School of Education College Bound program, which helps prepare high school students from Brighton High School, West Roxbury Academy and the Urban Science Academy in West Roxbury for college and beyond. Under the guidance of Mike Barnett, associate professor of Science Education and Technology at the Lynch School, an important focus of the program is to instill a love of science among the students, many of whom might otherwise shy away from it. He has been doing this since the summer of 2011, by teaching them to grow and harvest vegetables and herbs in a hydroponic garden, then sell them at farmers markets. "The marketing component has gotten the kids really excited," Barnett says. "That has been the anchor that got them to learn about the vegetables and hydroponics, because they had to explain it to customers.

Most of the program participants are the first in their families to even consider attending college. Some came to this country when they were young, from Jamaica, Haiti, the Dominican Republic, among other places. They are selected based on teacher recommendations and their applications. Barnett and Catherine Wong, director of urban outreach initiatives in the Lynch School (which includes College Bound), intentionally choose mid-level students, rather than academic superstars, who do not have very high-level math and science skills; students who, in Barnett's words, "just need a push."

Hydroponics is a process that allows plants to grow with water and mineral nutrients; no soil required. They can be grown indoors, which allows them to thrive even in climates that are not friendly to year-round growth—like ours. Certain produce, particularly greens, can grow faster hydroponically than they do in soil.

Barnett is passionate about urban science education, but says he had very little knowledge about gardening before starting this program. He partnered with the STEM Garden Institute in 2011. Founded by Boston College (BC) graduates Gerry and Janet Lorden, the Milton-based non-profit program combines hydroponic systems with a science, technology, engineering, and math curriculum—and a dose of health and nutrition education—to help students from elementary school through college and adults understand how the topics relate to their daily lives. Barnett credits a grant from the National Science Foundation and an equipment donation from Irving Backman, a local entrepreneur who supports alternative energy and environmentally friendly technologies, with "jumpstarting" the initiative.

Tucked in the furthest corner of a small, nondescript side street diagonally across Beacon Street from BC's suburban Chestnut Hill campus, a once-empty greenhouse is now a lush profusion of floor-to-ceiling greenery. White plastic tubes are stacked two and three rows high. Basil, lettuce, chard, kale, parsley, spinach, dill and other plants rooted in stone grow cubes sprout from round holes in the tubes; tomatillos and a variety of peppers grow in pots lining the perimeter.

Though natural light pours in from all sides of the glass structure, energy-efficient LED lights, as well as a few fluorescent grow lights shine down on the plants. The sound of water trickling, generated by the three

Ebb & Gro Hydro Systems feeding the potted plants, provides ambient background noise. This roughly 400-square-foot space is new to College Bound, its vertical systems laid out, assembled, and sowed with new life by Barnett and his students in early October. They moved from a smaller, rooftop space on campus. In the larger facility, they can grow between 1,000 and 1,500 pounds of produce every month.

The 20-ish students in the hydroponics track of the College Bound program (there are urban planning and media tracks as well) spend Saturday mornings here planting and caring for their crops, then harvesting the plants to sell at whichever farmers market is in season. Last summer, they spent a couple of weeks at the Brookline summer market. From mid-November through the end of February, they were at Egleston Square. They joined the Brookline winter market in January. Though the produce is not organic (they use nonorganic nutrient solution), it is pesticide-free and consumes very little energy—and it could hardly be more local.

The kids decide what to grow and how to market and price it. In the greenhouse, in addition to tending to plants, they develop the logo for their market booth and their slogan, and write copy to explain hydroponics and their products to customers. In mid-November, as the Egleston market was hitting its stride, they settled on the slogan, "Boston Teens Going Green," after testing several options on market customers. The hydroponics discourse includes a basic explanation of what hydroponics is and why they use certain lights and nutrients to grow the plants. "Having a hydroponic set-up at the table gets a lot of attention," Barnett notes.

On market days, those who are going dismantle the systems and load the plants, in their tubes, into BC vans, which are driven by Barnett and Andy Trossello. A chemistry teacher at West Roxbury Academy in the West Roxbury Educational Complex, Trossello is one of a handful of non-BC educators who, Barnett says, "are the real key to the program, as without them we wouldn't be nearly as successful."

Lori Phillips, who attends West Roxbury High School, is a hydroponics student leader who ended up in this track because the media group didn't have any more space. But almost immediately, she says, "I thought, this is really cool." Phillips and her twin sister, Lorien, who is in the media group, were born in Jamaica and moved to the United States when they were five. Of the six students working at Egleston Market on a November Saturday—including some from the urban planning and media groups—Lori is the go-to spokesperson, though when she is tied up with a customer the others handle themselves impressively. Her sister, for example, engages with a 20-something hipster who is planning a dinner party that evening. They discuss the hydroponics program, and he leaves with some basil and kale for his dinner. Randall, after his first bok choy sale, remains unflustered when a confrontational customer tells him, "I always think no soil no soul," then asks what he thinks when she says "food revolution." (His answer: "Different ways of growing food.") But he isn't able to sell her anything.

Lori says she likes working in the market because, "At first I didn't have a lot of confidence talking to people, but it built. People have reinforced it. One woman told me, 'I'm going to recommend you.' I like working here way better" than in the greenhouse.

At the group's first meeting of the academic year, before the new greenhouse was ready, Barnett handed out seed catalogs and told students to pick out plants they wanted to grow. At the next session, in the greenhouse, he advised, "Think about cool, niche products that we can sell that other people can't." A couple of weeks into the Egleston Market, where the group was selling out their crops but not making money, the kids understood what he meant. They decided to grow mizuna, which none of the other vendors were carrying. In subsequent weeks the sweet, Asian plant, which grows well, "sold like crazy," Barnett reports. The students also surveyed market customers to see what they wanted. Spinach, basil, parsley, and cilantro topped the list, so they planned their next round of growing accordingly.

A couple of weeks into the Egleston Market the hydroponics group also adjusted their prices, which had started out on the low side. To set prices initially, the students surveyed the Newton and Brookline summer farmers markets. They also searched online and checked produce prices at Hannaford's markets. At Egleston, they surveyed market customers on price expectations. And they started using an iPad sales inventory app that allows them to change prices on-the-go, so they can be flexible from week to week. Students will vote on what to do with their profits, and the topic is one of debate. Options currently range from donating the money to a food shelter to investing it in College Bound, to help keep the program running.

In the fall of last year Barnett, who was named 2012 Massachusetts professor of the year by the Carnegie Foundation, received a $250,000 National Science Foundation grant, along with the Salvation Army's Kroc Center and STEM Garden Institute, to launch an intergenerational hydroponics program at the Kroc Center in Upham's Corner in Dorchester. There will be three hydroponic systems—one in a former police booth. Currently, they have five towers in the booth, growing about 200 plants under four fluorescent grow lights and two LED lights. "I have to admit I am very stunned at how well it grows things," Barnett notes of that location.

Barnett's team trained Salvation Army staff in mid-December. Initially, they began working in the garden with elementary school students from after-school programs all over Boston (though the program is for elementary through high school). As of press time, elder citizens from the neighborhood were scheduled to join the program in March, learning with the students how to grow food hydroponically. They will sell the produce at a small market or give it to a kitchen inside the Kroc Center, expanding access to year-round fresh produce to residents of the neighborhood. Ultimately, Barnett says he would like to integrate this program with his College Bound hydroponics team but is determining the best way to do it.

By the time College Bound students enter the hydroponics program, they are high school juniors or seniors, thinking seriously about college—or starting to. The program runs through the summer, meeting for two weeks. It is a testament both to the dedication of the instructors and student participants that they use this time to continue their productivity.

This summer, College Bound kids will build on a foundation they laid a year earlier. In July 2012, the group had a booth on two consecutive Thursdays at the Brookline Farmers Market. This year they will transition from that town's winter market right into summer. They will be easy to spot; the youngest farmers on site,

and likely the only hydroponics group. Don't hesitate to ask questions. Their enthusiasm is catching.

Andrea Pyenson writes about food and travel. Her work has appeared in several print and online publications, including the *Boston Globe*, the *Washington Post*, *Edible Cape Cod*, *Fine Cooking*, msn.com, and oneforthetable.com. She is co-author, with Andy Husbands and Chris Hart, of *Wicked Good Barbecue* and its upcoming sequel (April), *Wicked Good Burgers*. Andrea can be reached at apyenson@gmail.com.

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